

BLUE

Work Order ID 61035



Page 1

August 4, 2010 1:37:35 PM

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Item Name: Crosstube Fwd, Blue

Stop



Start Date: 8/04/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/16/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:



Date: 10-8-04 Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr	Revision Nbr
D206-667-143	C

100



DOCUMENT CONTROL

DC

Document Control

0.00

0.00

✓ for BG 10-9-02

S bloska

110



Pick Kit

0.00

Packaging

0.00

Packaging

Memo

Packaging

14 a MB 10-08-25

120



BENDING MACHINE - CROSSTUBES

0.00

CNC Bend 2

CNC Alpha 160 Bender

Memo

0.00

Bend tube as per Dwg D206-667-143 using CNC bender program

14 a MB 10-08-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 61035

Page 2

August 4, 2010 1:37:35 PM

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Item Name: Crosstube Fwd, Blue

Stop



Start Date: 8/04/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/16/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date: _____

Tooling:

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N):

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130



QC

QC15- Crosstube Dimensional Check

0.00

S 10/08/26

Quality Control

Memo

0.00



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 61035

Page 3

August 4, 2010 1:37:35 PM

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Item Name: Crosstube Fwd, Blue

Stop



Start Date: 8/04/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/16/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop


**Sequence ID/
Work Center ID**
**Operation
Description**
**Set Up/
Run Hours**

Tool ID

Tool

**Plan
Code**
**Accept
Qty**
**Reject
Qty**
**Reject
Number**
**Insp.
Stamp**

140



Crosstubes

Crosstubes

Memo

0.00

1-Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill only the top (2) holes.

5-Drill pilot holes as per Dwg D206-667-143. Drill only the top (2) holes.

6-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D206-667-141.

8-C'sink holes as per Dwg D206-667-143. Allow rivet to sit below surface to compensate for paint.

9 -Scribe part # and batch # using vibrating stylus as per Dwg D206-667-143 Inside of Cuff(Donot engrave on outside of tube)

10-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143

NIP SAD
10-08-26

MB
10-08-26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 61035

Page 4

August 4, 2010 1:37:35 PM

Item ID: D206-667-103BL

Accept



Setup

Start



Revision ID:

Item Name: Crosstube Fwd, Blue

Stop



Start Date: 8/04/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/16/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150



HandFXtube

Crosstubes Chemical Conversion

0.00

MB/10-08-26

Hand Finishing Crosstubes

160



QC3- Inspect Part Finish

0.00

QC

Memo

0.00

Quality Control

170



QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 61035

Page 5

August 4, 2010 1:37:35 PM

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Item Name: Crosstube Fwd, Blue

Stop



Start Date: 8/04/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/16/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____

Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

Outsource process - NDT per QSI038 4.1

0.00

PO: 12463

(S) 10/18/27 ①



Outsource2

Memo

0.00

Outsource process - NDT

CROSSTUBES

190



Packaging

0.00

Packaging

Memo

0.00

Ensure copy of NDT results attached to work order.

200



QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 61035

Page 6

August 4, 2010 1:37:35 PM

Item ID: D206-667-103BL

Accept



Setup

Start



Revision ID:

Item Name: Crosstube Fwd, Blue

Stop



Start Date: 8/04/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/16/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210



SprayPaint

0.00

RT 10-08-30

SprayPaint

Memo

0.00

Spray Painting

I-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with
Delfleet Blue B 113121
Delfleet Clear B 113314PRIME:
Start Time: 7:00
Finish Time: 8:00PAINT:
Start Time: 11:00
Finish Time: 12:00

220



QC14- Inspect Spray Paint

0.00

ML 10-08-31 ①

QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 61035

Page 7

August 4, 2010 1:37:35 PM

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Item Name: Crosstube Fwd, Blue

Stop



Start Date: 8/04/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/16/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

230



Crosstubes

Crosstubes

Crosstubes

Crosstubes

Memo

0.00

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI
015. Let cure for 12h after installation and prior to packaging. Note: (2) Aft
holes should be facing up.

A/R Magnobond 6398 : 114198

2-Install supports and clamps as per Dwg D206-667-143. Torque clamps to 80-
100 in lb → 10.00 02

3-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Imron
paint.

240



QC5- Inspect part completeness to step on W/O

0.00

QC

Quality Control

Memo

0.00

BT 10-08-31
1 A 100902

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 61035

Page 8

August 4, 2010 1:37:35 PM

Item ID: D206-667-103BL

Accept



Setup

Start



Revision ID:

Item Name: Crosstube Fwd, Blue

Stop



Start Date: 8/04/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/16/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center ID

250

Operation
Description

Pick Kit

Set Up/
Run Hours

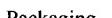
0.00

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Packaging



10/01/2010

260



QC

Quality Control

QC4- 100% Inspect kits for completeness

0.00

8/10/09

0.00

XL

270

_____

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 61035

Page 9

August 4, 2010 1:37:35 PM

Item ID: D206-667-103BL

Accept



Setup

Start



Revision ID:

Item Name: Crosstube Fwd, Blue

Stop



Start Date: 8/04/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/16/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

280



QC

QC21- Final Inspection - Work Order Release

0.00

10/09/08 HJ

Quality Control

Memo

0.00

MF
10-9-08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 2

August 4, 2010 1:37:39 PM

Work Order ID: 61035



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 8/04/10

Required Date: 8/16/10

Start Qty: 1.00

Required Qty: 1.00

D2891-1

Manufactured No

230

Each

69.0000

2

2

2.25 Support



Location	Loc Qty	Loc Code
LG	69	
46159	15	
50952	18	
<u>53347</u>	4	X2
53773	20	
55786	12	

ATTN: BLUE

D3595-063-395



RUBBER CUSHION

Manufactured No

230

Each

46.0000

4

4

cut (4)0.063" X 3.95"

MS20601-AD4W8



RIVET

Purchased No

230

Each

286.0000

14

14

~~WAH36~~ → 14 m 112203

70

Location	Loc Qty	Loc Code
ST322	286	
108521	98	
112203	188	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

August 4, 2010 1:37:39 PM

Page 3

Work Order ID: 61035



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 8/04/10

Required Date: 8/16/10

Start Qty: 1.00

Required Qty: 1.00

MS21920-20



Purchased No

230

Each

103.0000

4

4



BT (0-08-31)

Clamp (per MIL-DTL-8783C)

Location	Loc Qty	Loc Code
LG	103	
<u>112624</u>	18	<u>X4</u>
114687	35	
114779	24	
115057	26	

AN5-30A



Purchased No

250

Each

110.0000

4

4



10/9/2SF

BOLT

Location	Loc Qty	Loc Code
ST339	110	
<u>102473</u>	4	<u>Y</u>
105144	10	
112933	21	
114437	25	
114941	50	

AN5-32A



Purchased No

250

Each

232.0000

4

4



10/9/2SF

Bolt

Location	Loc Qty	Loc Code
ST340	232	
<u>113121</u>	4	
<u>114056</u>	74	<u>Y</u>
<u>114405</u>	50	
115016	50	
115108	50	
15072	4	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

August 4, 2010 1:37:39 PM

Page 4

Work Order ID: 61035



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 8/04/10

Required Date: 8/16/10

Start Qty: 1.00

Required Qty: 1.00

AN5-7A

Purchased

No

250

Each

200.0000

10

10

10/9/25f



Bolt

Location	Loc Qty	Loc Code
ST337	200	
100826	10	10
109061	4	
113149	186	

AN960JD516

NAS1149D0563J Purchased

No

250

Each

34.0000

18

18

M114742 10/9/25f



Washer

Location	Loc Qty	Loc Code
ST	34	
103694	18	
107534	12	
109287	4	

AN970-4

Purchased

No

250

Each

86.0000

12

10/9/25f



Washer

Location	Loc Qty	Loc Code
ST349	86	
112991	36	
115266	50	

MS21042L5

Purchased

No

250

Each

764.0000

4

10/9/25f



Nut

Location	Loc Qty	Loc Code
ST139	264	
114813	264	X

Location	Loc Qty	Loc Code
ST300	500	
115156	500	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

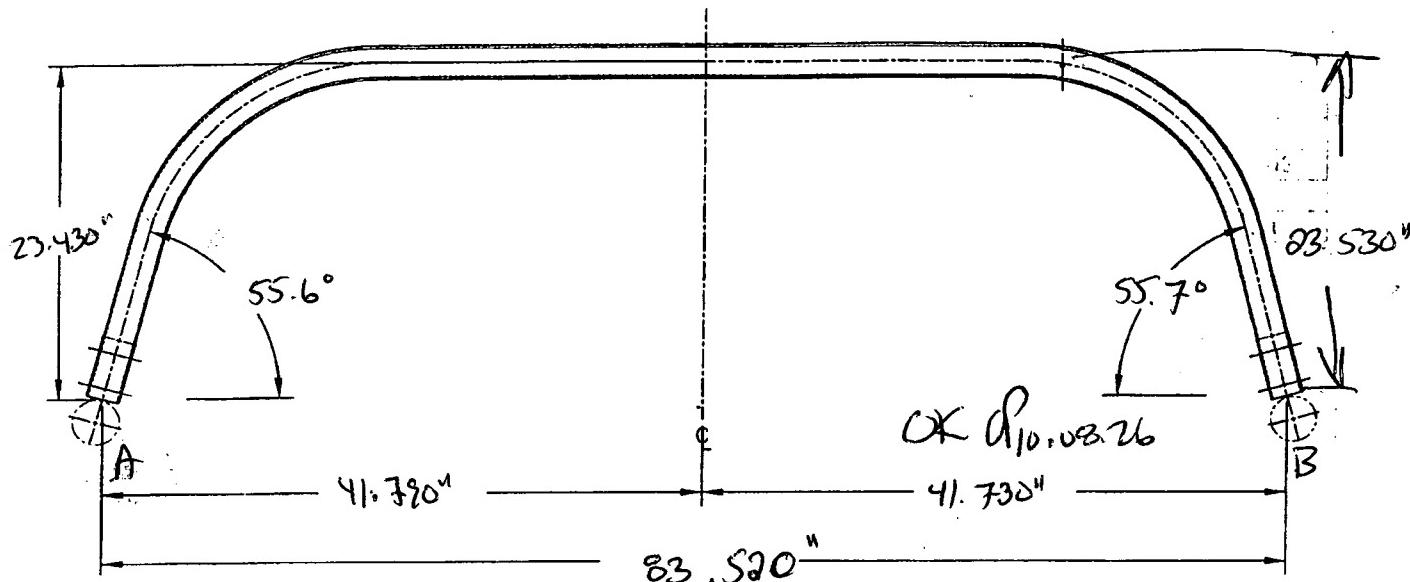
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	61035
Description: Crosstube High Fwd (206L)	Part Number:	D206-667-103
Inspection Dwg: D206-667-143 Rev: C		Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.10



Comments
ONE SIDE NARROW. ACCEPTABLE P10.08.26

QC15 Inspection	S
Date	10/08/26

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.26	Dimensions updated per Dwg Rev C	KJ	
C	09.10.22	Minimum height dimension revised	KJ	J

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng.	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

D

D

C

C

B

B

A

A

Item	Qty	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 104.98±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. *1035*
P10-8-04

RELEASED
2011-10-14

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A6-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BH/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>q</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>RF</i>	DRAWING NO. <i>D206-667-143</i> REV. C SHEET 1 OF 4	
CHECKED	<i>q</i>	MFG. APPR. <i>B</i>	
APPROVED	<i>q</i>	TITLE <i>CROSSTUBE ASSY (206L HIGH FWD)</i> NTS	
DE APPR.	<i>q</i>	DATE <i>08.11.06</i>	

COPYRIGHT © 2000 BY DART AEROSPACE LTD
 THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS
 NOT TO BE USED FOR ANY OTHER PURPOSE OR DISCLOSED TO ANY OTHER PERSON WITHOUT
 WRITTEN PERMISSION FROM DART AEROSPACE LTD

8

7

6

5

4

3

2

1

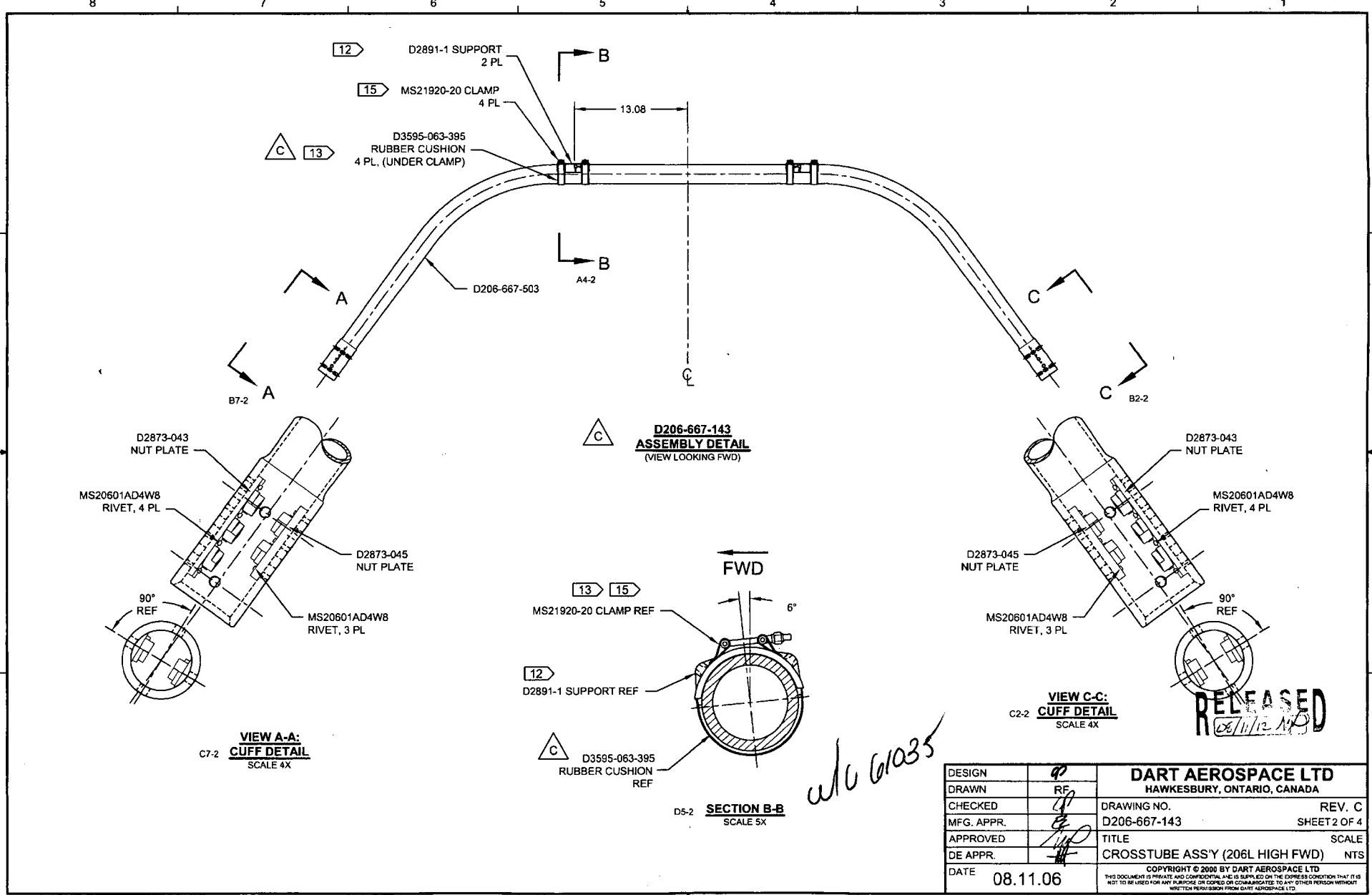
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	<i>P</i>	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>Q</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>E</i>	D206-667-143	SHEET 2 OF 4
APPROVED	<i>JW</i>	TITLE	SCALE
DE APPR.	<i>MM</i>	CROSSTUBE ASS'Y (206L HIGH FWD)	
DATE	08.11.06		

COPYRIGHT © 2006 BY DART AEROSPACE LTD
THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS NOT TO BE COPIED OR USED FOR ANY PURPOSE, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE EXPRESS WRITTEN CONSENT OF DART AEROSPACE LTD.

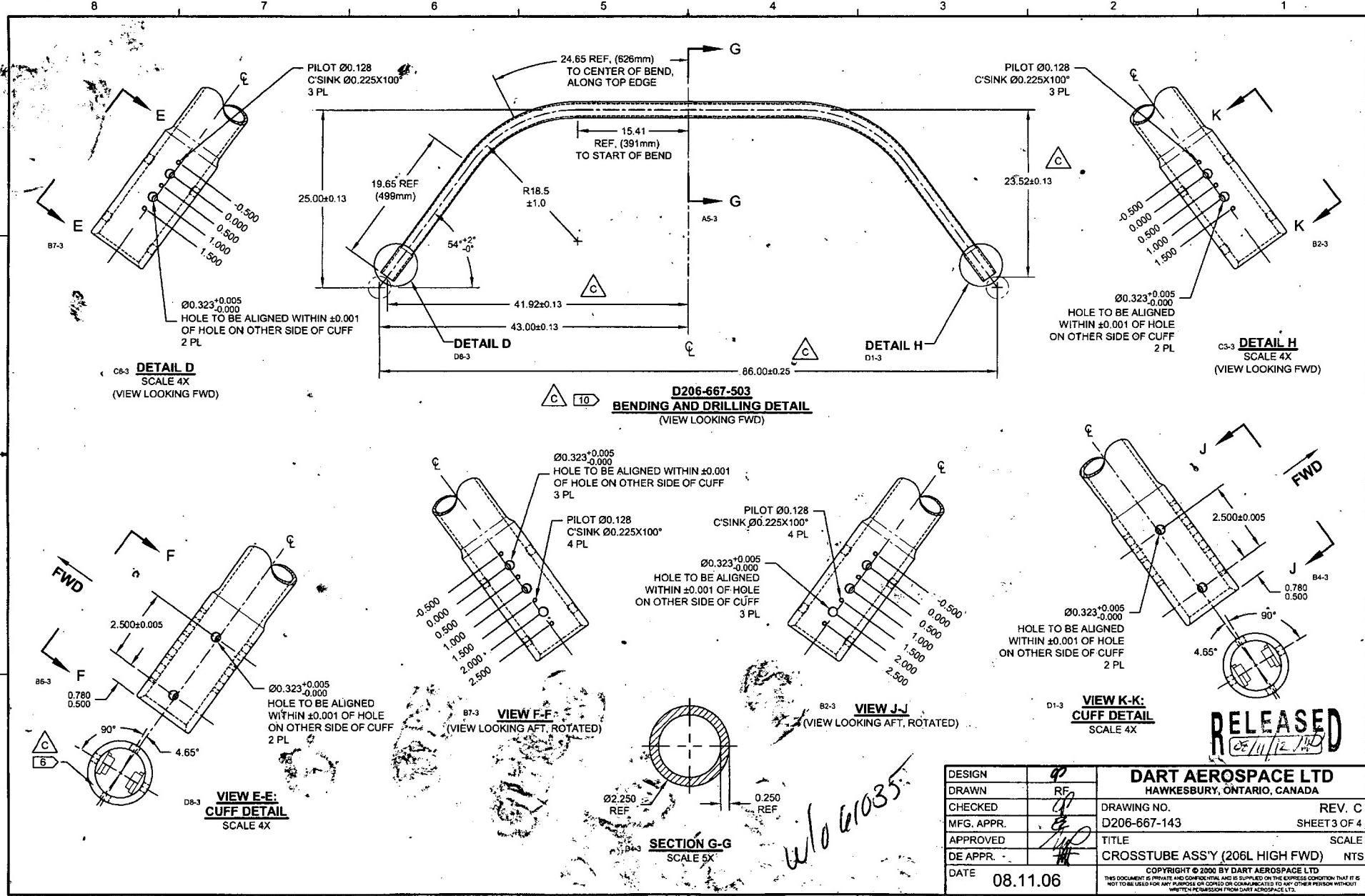
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



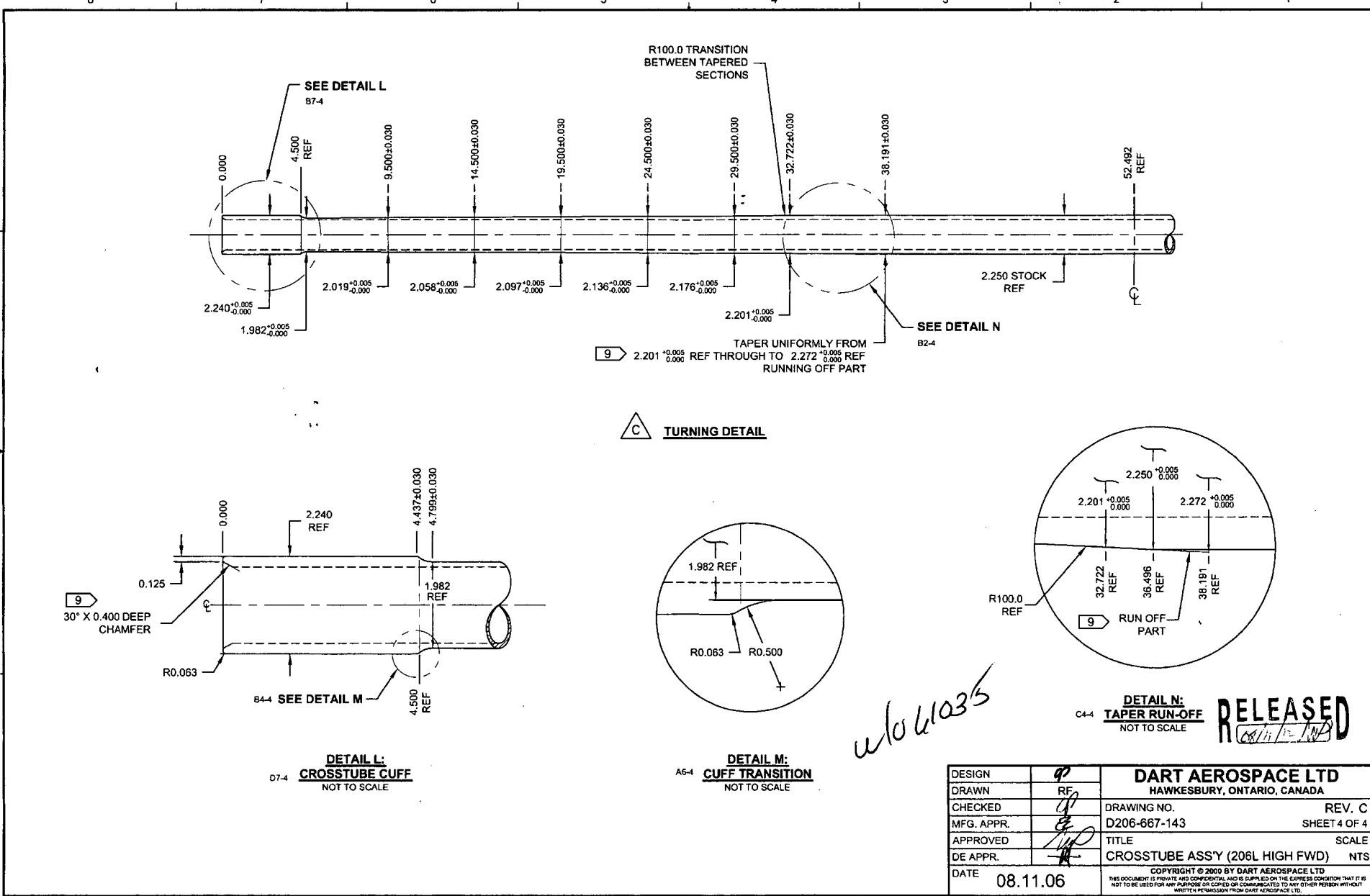
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

REFERENCE ONLY

DART AEROSPACE LTD.

IIN-D206-667

Page 14 of 14

5.0 PARTS LIST

Item	Qty -011	Qty -013	Qty -015	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X									D206-667-011	SPACER BLOCK KIT
		X								D206-667-013	NUT PLATE KIT (-101/-103/-105/-203/-205)
		X								D206-667-015	NUT PLATE KIT (-201)
			X							D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
				X						D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
					X					D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
						X				D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
							X			D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
								X		D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1			1							D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2				1						D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3					1					D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4						1				D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5							1			D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6								1		D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10		*2	*2	*2			*2			D2891-1	SUPPORT
11							*2			D2892-1	SUPPORT
12								*1		D2894-1	SUPPORT
13		*2	*2	*2			*2			D2856-400-694	ABRASION STRIP
14							*2			D2856-400-773	ABRASION STRIP
15								*1		D2856-600-851	ABRASION STRIP
16		*4	*4	*4			*4			MS21920-20	CLAMP
17							*4			MS21920-22	CLAMP
18								*2		MS21920-24	CLAMP
19		4	4	4			4			AN5-32A	BOLT
20							4			AN5-34A	BOLT
21			4	4	4	4	4	4		MS21042L5	NUT (OR MS21042-5)
22			8	8	8	8	8	8		AN960JD516	WASHER
23									*2	D3190-1	CHAFING SHIELD
30	8									AN4-6A	BOLT
31	8									AN4-7A	BOLT
32	16									AN960JD416	WASHER
33	2									D3193-041	SPACER BLOCK ASSEMBLY
40	2		*2			*2	*2	*2	*2	D2873-043	NUT PLATE
41	2		*2			*2	*2	*2	*2	D2873-045	NUT PLATE
42		2		2						D2872-043	NUT PLATE
43	2		2							D2872-045	NUT PLATE
44	10		10			10				AN5-7A	BOLT
45	10	10		10			10	10	10	AN5-10A	BOLT
46	4	4	4	10	4		4			AN5-30A	BOLT
47	4						4			AN5-32A	BOLT
48	18	18	10	12	10	10	10	10		AN960JD516	WASHER
49	4	4		6						MS21042L5	NUT (OR MS21042-5)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/241/143/243, & D407-667-145/245 ASSEMBLIES ABOVE

• COPYRIGHT © 2001 BY DART AEROSPACE LTD • THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.
--

Revision: C
Date: 05.07.26

DART SERVICE INSTRUCTION

REFERENCE ONE

TO AMEND INSTALLATION INSTRUCTIONS IIN-D206-667 REV. C
AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D206-667 REV. 2

REF CANADIAN STC: SH01-5

REF FAA STC: SR01304NY

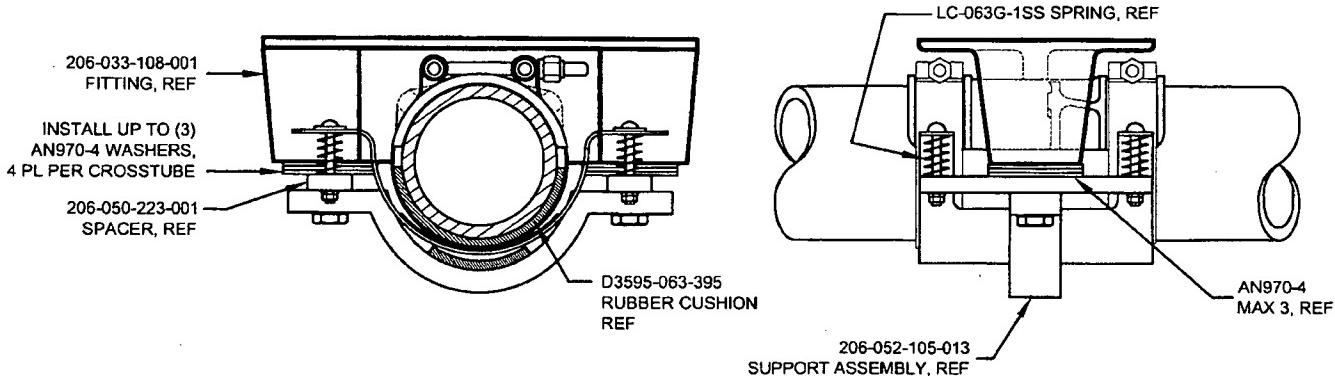
REF EASA STC: EASA.IM.R.S.01179

PROBLEM:

FOR D206-667-103 CROSSTUBES (206L FWD) AT CHG 003 AND SUBSEQUENT (SEE DSI 9415) PROPER INSTALLATION OF THE OEM SUPPORT ASSEMBLIES MAY BE IMPOSSIBLE DUE TO THE ADDITIONAL THICKNESS OF THE DART D3595-063-395 RUBBER CUSHIONS. THE 206-052-105-013 SUPPORT ASSEMBLY (OR EQUIVALENT) MAY SIT TOO HIGH RELATIVE TO THE 206-033-108-001 FITTING, CAUSING THE LC-063G-1SS SPRING (OR EQUIVALENT) TO BE OVERLY COMPRESSED.

SOLUTION:

IT IS ACCEPTABLE TO LOWER THE SUPPORT ASSEMBLY BY INSTALLING UP TO QTY (3) AN970-4 WASHERS BETWEEN THE 206-033-108-001 FITTING (OR EQUIVALENT) AND THE 206-050-223-001 SPACER (OR EQUIVALENT). SEE FIGURE BELOW FOR REFERENCE.



CROSSTUBE SECTION: SUPPORT DETAIL

PARTS LIST:

THE FOLLOWING PARTS HAVE BEEN INCLUDED WITH D206-667-103 CROSSTUBES AT CHG 004 AND SUBSEQUENT

ITEM	Qty -103	PART NUMBER	DESCRIPTION
60	12	AN970-4	WASHER

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED
BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 08.12.17
CERT. NO.: SH01-5
ISSUE NO.: 3

A	NEW ISSUE	CP	08.12.17
REV.	DESCRIPTION	BY	DATE
DESIGN	99	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	99		
CHECKED	PH	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9439	SHEET 1 OF 1
APPROVED	H	TITLE	SCALE
DE APPR.	H	206L FWD XTUBE SUPPORT MOD.	NTS
DATE	08.12.17	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



LIQUID PENETRANT TEST REPORT

P- 15187

CLIENT DART Aerospace DATE Aug 27-2010
 ATTENTION LINDA / CHANTEL TIME AM PM
 ADDRESS 1270 ABERDEEN STREET
HAWKES BURY ON.
K6A 1K7 PO/WO NO. 188-10-0829
 PROJECT F. P. I. WORK LOCATION HAWKES BURY PLANT
 ITEM(S) EXAMINED 9 PCS ACCEPTANCE STD. ASME 1417 REV./DATE 2007

JOB DESCRIPTION	PROCEDURE NO. LT-0002 REV./DATE	TECHNIQUE NO. LT-TECH2 REV./DATE
PART NO.	MATERIAL <u>Aluminum</u> THICKNESS <u>Various</u>	
SCOPE	<u>WET FLUORESCENT LIQUID PENETRANT</u> <u>INSPECTION CARRIED OUT 100% EXTERNAL.</u>	

METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND <u>MAGNAFLUX</u>	BLACK LIGHT S/N <u>16459</u> <input type="checkbox"/> OUTPUT > 1000 $\mu\text{W}/\text{cm}^2$ <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>ZL 67</u> MINIMUM DWELL TIME <u>450</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>H2O</u> MINIMUM DRY TIME <u>>10</u> MIN.	OTHER <u>LABVIEW</u>
DEVELOPER <u>SKD 52</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N <u>1098866</u> CAL DUE DATE <u>OCT 19 2010</u>
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	

SURFACE CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE <input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F <input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F

RESULTS- <input type="checkbox"/> METRIC <input checked="" type="checkbox"/> IMPERIAL		
1 - CROSS TUBE-W.O. 61038	✓	
1 - CROSS TUBE-W.O. 61037	✓	
1 - CROSS TUBE-W.O. 61387	✓	
1 - CROSS TUBE-W.O. 61388	✓	
1 - CROSS TUBE-W.O. 60523	✓	
1 - CROSS TUBE-W.O. 60524	✓	0-08-30
1 - CROSS TUBE-W.O. 61036	✓	
1 - CROSS TUBE-W.O. 61035	✗	
1 - CROSS TUBE-W.O. 60573	✓	

Scope of Services
 The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
 In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE <u>Don Titley</u> PRINT <u>Don Titley</u> SIGNATURE <u>Don Titley</u> DTR # <u>E27424</u>	REPORT
TECHNICIAN (SIGNATURE): <u>Mike Johnson</u>	REVIEWED BY:
NAME: (PRINT): <u>Mike Johnson</u>	NAME <u></u> INITIALS <u></u>
1 ST TECHNICIAN CGSB LEVEL <u>II</u> SNT LEVEL <u></u> CGSB LEVEL <u></u> SNT LEVEL <u></u>	2 ND TECHNICIAN CGSB REG. NO. <u>6606</u>
CGSB REG. NO. <u>6606</u>	

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY